

What is Claimed is:

1. A projection system, comprising:
an integrator with an output end;
a matrix of output windows at the output end of the integrator;
5 a pattern of red, green and blue monochromatic filters on the matrix of output windows passing a matrix of red, green, and blue monochromatic pixels of light;
an imager for modulating the matrix of monochromatic pixels of light; and
a light shifting device for shifting the matrix of monochromatic pixels of light to temporally form a pattern of overlying monochromatic pixels of light of different colors,
10 viewable as a color image.
2. The projection system of claim 1 wherein the light shifting device is a mirror pivotal over a small angle sufficient to shift the monochromatic pixels of light by one pixel location.
3. The projection system of claim 1 wherein the light shifting device is a shift
15 wheel.
4. The projection system of claim 3 wherein the shift wheel includes angularly successive refracting and non-refracting sections.
5. The projection system of claim 4 wherein the shift wheel rotates about an axis that is at an angle to a light output from the integrator and the refracting sections comprise an
20 optically transmitting material that refracts light incident thereon proportionally to the thickness of the optically transmitting material.
6. The projection system of claim 1 wherein one-fourth of the output windows have a filter of a first color and are essentially equally spaced apart, one-fourth of the output windows have a filter of a second color and are essentially equally spaced apart, one-half of
25 the output windows have a filter of a third color and are essentially equally spaced apart, and

each of the windows having a filter of the first and second colors are vertically and horizontally adjacent a window having a filter of the third color;

7. The projection system of claim 6 wherein the first color is red, the second color is blue, and the third color is green.

5 8. The projection system of claim 1 wherein the pattern of filters comprises alternating rows, the first row having alternating red filters and green filters, the second row having alternating green filters and blue filters, and the red filters and blue filters of each row are vertically adjacent to green filters.

10 9. The projection system of claim 1 wherein the imager is a DLP micro-display having a rectangular grid of micro-mirrors.

10. The projection system of claim 9 wherein the output windows are smaller than the micro-mirrors.

11. A projection system comprising:

a light source;

15 an integrator being optically coupled to the light source and having an array of windows at an output end to form an array of discrete pixels of light;

a micro-display being optically coupled to the array of discrete pixels of light for modulating each pixel of light incident on a corresponding position of the micro-display;

20 a pixel shift wheel optically coupled to a light output of the micro-display for temporally shifting the light output.

12. The projection system of claim 11 wherein the micro-display comprises an array of micromirrors, and each discrete pixel of light from an individual window of the integrator is projected onto and modulated by a corresponding micromirror.

13. The projection system of claim 11 wherein the shift wheel comprises angularly sequential sections including at least one non-refracting section and one or more refracting sections.

14. The projection system of claim 12, wherein each window of the integrator is covered by a filter to project pixels of differing monochromatic light and the shift wheel is configured to successively shift different color pixels onto the same position.

15. A projection system comprising:
a light source;
an integrator being optically coupled to the light source and having an array of windows at an output end to form an array of discrete pixels of light;
a micro-display being optically coupled to the array of discrete pixels of light for modulating each pixel of light incident on a corresponding position of the micro-display;
a shifting plate optically coupled to a light output of the micro-display for temporally shifting the light output.

16. The projection system of claim 15 wherein the micro-display comprises an array of micromirrors, and each discrete pixel of light from an individual window of the integrator is projected onto and modulated by a corresponding micromirror.

17. The projection system of claim 15, wherein each window of the integrator is covered by a filter to project pixels of differing monochromatic light and the shift plate is pivotable to successively shift different color pixels onto the same position.

18. The projection system of claim 15, wherein the shift plate is pivotable to project pixels of light output from the micro-display between the positions of discrete pixels of an array projected by the shift plate at a previous position.